

[illegible]

```
MM      MM  PPPPPPPP  DDDDDDDD  AAAAAA  TTTTTTTTTT
MM      MM  PPPPPPPP  DDDDDDDD  AAAAAA  TTTTTTTTTT
MMMM    MMMM PP      PP DD      DD AA      AA TT
MMMM    MMMM PP      PP DD      DD AA      AA TT
MM      MM  PP      PP DD      DD AA      AA TT
MM      MM  PP      PP DD      DD AA      AA TT
MM      MM  PPPPPPPP DD      DD AA      AA TT
MM      MM  PPPPPPPP DD      DD AA      AA TT
MM      MM  PP      DD      DD AAAAAAAAAA TT
MM      MM  PP      DD      DD AAAAAAAAAA TT
MM      MM  PP      DD      DD AA      AA TT
MM      MM  PP      DD      DD AA      AA TT
MM      MM  PP      DDDDDDDD AA      AA TT
MM      MM  PP      DDDDDDDD AA      AA TT
```

```
....
....
....
....
```

```
LL      IIIIII  SSSSSSSS
LL      IIIIII  SSSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SSSSSS
LL      II      SSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LLLLLLLLLLLL IIIIII  SSSSSSSS
LLLLLLLLLLLL IIIIII  SSSSSSSS
```

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Interrupt Stack for Secondary processor

```
0000 1  :
0000 2  : Version: 'V04-000'
0000 3  :
0000 4  :
0000 5  : .MCALL MFPR
0000 6  : .TITLE MPDAT - MULTI-PROCESSING DATA BASE
0000 7  : .IDENT 'V04-000'
0000 8  :
0000 9  : *****
0000 10 :
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0000 29 : *
0000 30 : *****
0000 31 :
0000 32 : ++
0000 33 :
0000 34 : Facility: Executive , Multi-processing data base
0000 35 :
0000 36 : Abstract: Data base of multi-processing information
0000 37 :
0000 38 : Environment: MODE=Kernel
0000 39 :
0000 40 : Author: Kathleen D. Morse, Creation date: 08-Jul-1981
0000 41 :
0000 42 : Modified by:
0000 43 :
0000 44 : V03-005 KDM0020 Kathleen D. Morse 04-Oct-1982
0000 45 : Add a counter and error log message for the invalidate
0000 46 : loop time-out logic.
0000 47 :
0000 48 : V03-004 KDM0012 Kathleen D. Morse 20-Sep-1982
0000 49 : Add second error log buffer.
0000 50 :
0000 01 -
0000 --
```

```
0000 52 : Macro Library Calls
0000 53 :
0000 54 :
0000 55 :
0000 56 : $CADEF ; Define conditional assembly parameters
0000 57 : $EMBDEF ; Define error message buffer header
0000 58 : $MPSDEF ; Define secondary processor states
0000 59 :
0000 60 :
0000 61 : Equated Symbols
0000 62 :
0000 63 :
0000 64 :
0000 65 : Local Data
0000 66 :
0000 67 :
00000000 68 : .PSECT $$$MPDATA, LONG, WRT
0000 69 :
0000 70 :
0000 71 : .ALIGN LONG
0000 72 :
0000 73 : Major pointers - Initialized by MLOAD
0000 74 :
0000 75 MP$SAL_MPMBASE:: ; Base VA of multiport memory registers
00000000 0000 76 .LONG 0 ;
00000000 0004 77 .LONG 0 ;
00000000 0008 78 .LONG 0 ;
00000000 000C 79 .LONG 0 ;
00000000 0010 80 MP$SGL_CURPCB:: ; Secondary processor current PCB
00000000 0010 81 .LONG SCH$GL_NULLPCB ;
00000005 0014 82 MP$SGL_STATE:: ; State of secondary processor
00000005 0014 83 .LONG MP$K_INITSTATE ; Initially set to INIT state
0018 84 :
0018 85 : 1 => Idle
0018 86 : 2 => Drop; CURPCB correct
0018 87 : (SVPCTX done)
0018 88 : 3 => Busy; CURPCB correct
0018 89 : (LDPCTX not yet done)
0018 90 : 4 => Execute; CURPCB correct
0018 91 : (LDPCTX done)
0018 92 : 5 => Init
0018 93 : 6 => Stop
0018 94 :
00000000 0018 95 MP$SGL_PRIMSKC:: ; Primary processor interrupt clear
00000000 001C 96 .LONG 0 ;
00000000 001C 97 MP$SGL_PRIMSKT:: ; Primary processor interrupt trigger
00000000 0020 98 .LONG 0 ;
00000000 0020 99 MP$SGL_SCNDMSKC:: ; Secondary processor interrupt clear
00000000 0024 100 .LONG 0 ;
00000000 0024 101 MP$SGL_SCNDMSKT:: ; Secondary processor interrupt trigger
00000000 0028 102 .LONG 0 ;
00000000 0028 103 MP$SGL_INVALID:: ; Invalidate address
00000000 002C 104 .LONG 0 ;
00000000 002C 105 MP$SGL_MPMIIR:: ; MA780 interrupt request register adr
00000000 0030 106 .LONG 0 ;
00000000 0030 107 MP$SGL_BUGCHECK:: ; Indicator for bugcheck status
00000000 0030 108 .LONG 0 ;
```

```
00000000 0034 109 MPSSGL_STOPFLAG::      ; Indicator for STOP/CPU requests
00000000 0034 110 .LONG 0
00000000 0038 111 MPSSGL_INTERLOCK::    ; Interlock used to flush cache
00000000 0038 112 .LONG 0
00000000 003C 113 MPSSGL_PFAILTIM::      ; Indicator if powerfail in progress
00000000 003C 114 .LONG 0
0040 115
0040 116
00000000 0040 117 MPSSGL_SECREQFLG::      ; Indicator for secondary requests
00000000 0040 118 .LONG 0
0044 119
00000000 0044 120 MPSSGL_ERLBUFIND::      ; Secondary error log buffer indicator
00000000 0044 121 .LONG 0
0048 122
0048 123
00000000 0048 124 MPSSGL_ERLSEQNUM::      ; Secondary error log sequence number
00000000 0048 125 .LONG 0
004C 126
00000000 004C 127 MPSSGL_SAVEDAP::      ; Saved value of secondary AP
00000000 004C 128 .LONG 0
0050 129
00000000 0050 130 MPSSGQ_MPSTRTIM::      ; 64-bit time and date when multi-
00000000 0050 131 .LONG 0
00000000 0054 132 .LONG 0
00000000 0058 133 MPSSGL_INV_NACK::      ; Indicator that secondary did not
00000000 0058 134 .LONG 0
005C 135
005C 136
005C 137 ; Secondary Timer Performance Statistics
005C 138
005C 139
00000002 005C 140 .IF NE CAS_MEASURE      ; Check for measurement enabled
005C 141
005C 142 .ALIGN LONG
005C 143 MPSSAL_CPUTIME::      ; Performance measurement array for
005C 144
00000000 005C 145 .LONG 0
00000000 0060 146 .LONG 0
00000000 0064 147 .LONG 0
00000000 0068 148 .LONG 0
00000000 006C 149 .LONG 0
00000000 0070 150 .LONG 0
0074 151
00000000 0074 152 MPSSGL_NULLCPU::      ; Null process cpu time
00000000 0074 153 .LONG 0
0078 154
0078 155 .ENDC
0078 156
0078 157
0078 158 ; The following is error log text that the primary writes into the
0078 159 ; error log as system service type entries...merely ASCII text.
0078 160
0078 161 MPST_INV_NACK::
0078 162 .ASCII \Attached processor did not acknowledge invalidate request.\
```

```
6F 72 70 20 64 65 68 63 61 74 74 41
6E 20 64 69 64 20 72 6F 73 73 65 63
64 65 6C 77 6F 6E 6B 63 61 20 74 6F
74 61 64 69 6C 61 76 6E 69 20 65 67
```

6D 65 2E 74 73 65 75 71 65 72 20 65 00A8
65 64 74 73 79 73 20 65 68 54 20 20 00B2
65 64 20 6E 65 65 62 20 73 61 68 20 00BE
20 61 20 6F 74 20 64 65 64 61 72 67 00CA
38 37 2F 31 31 20 65 6C 67 6E 69 73 00D6
2E 30 00E2
0000006C 00E4

163 .ASCII \ The system has been degraded to a single 11/780.\

164 MPSSC_INV_NACK == . - MPSST_INV_NACK

165

166 ;

167 ; The following data does not fit into the header page

168 ; of the multi-processing code, and therefore is positioned

169 ; after the secondary's SCB.

170 ;

171 .PSECT \$\$\$ERLBUF,QUAD,WRT

172 .LONG EMB\$K_LENGTH

; Error log message buffer header

173 MPSSAL_ERLBUF1:: ; Secondary error log buffer 1

174 .BLKB MPSSK_ERLBUFSIZ-EMB\$K_LENGTH ; (Holds 1 message of maximum size)

175 .LONG EMB\$K_LENGTH ; Error log message buffer header

176 MPSSAL_ERLBUF2:: ; Secondary error log buffer 2

177 .BLKB MPSSK_ERLBUFSIZ-EMB\$K_LENGTH ; (Holds 1 message of maximum size)

178

179

00000000

00000004 0000

0000 0004

00000200 0004

00000004 0200

0204

00000400 0204

0400

0400

MPDAT
V04-000

- MULTI-PROCESSING DATA BASE L 1
Interrupt Stack for Secondary processor 16-SEP-1984 02:00:27 VAX/VMS Macro V04-00
5-SEP-1984 02:06:11 [MP.SRC]MPDAT.MAR;1

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```
0400 181 .SBTTL Interrupt Stack for Secondary processor
0400 182 :
0400 183 : Interrupt stack reservation for secondary processor
0400 184 :
00000000 185 .PSECT $$$INTSTK, LONG, WRT
0000 186 .ALIGN LONG
00000400 0000 187 .BLKB 512*2
0400 188 MPSSAL_INTSTK:: ; 2 Pages
0400 189 .END ; Empty stack pointer
```

MPDAT
Symbol table

- MULTI-PROCESSING DATA BASE

M 1

16-SEP-1984 02:00:27 VAX/VMS Macro V04-00
5-SEP-1984 02:06:11 [MP.SRC]MPDAT.MAR;1

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CAS MEASURE	= 00000002		
EMBSK LENGTH	= 00000004		
MPSSAL_CPUTIME	0000005C	RG	02
MPSSAL_ERLBUF1	00000004	RG	03
MPSSAL_ERLBUF2	00000204	RG	03
MPSSAL_INTSTK	00000400	RG	04
MPSSAL_MPMBASE	00000000	RG	02
MPSSC_INV_NACK	= 0000006C	G	
MPSSGL_BUGCHECK	00000030	RG	02
MPSSGL_CURPCB	00000010	RG	02
MPSSGL_ERLBUFIND	00000044	RG	02
MPSSGL_ERLSEQNUM	00000048	RG	02
MPSSGL_INTERLOCK	00000038	RG	02
MPSSGL_INVALID	00000028	RG	02
MPSSGL_INV_NACK	00000058	RG	02
MPSSGL_MPMIIR	0000002C	RG	02
MPSSGL_NULLCPU	00000074	RG	02
MPSSGL_PFAILTIM	0000003C	RG	02
MPSSGL_PRIMSKC	00000018	RG	02
MPSSGL_PRIMSKT	0000001C	RG	02
MPSSGL_SAVEDAP	0000004C	RG	02
MPSSGL_SCNDMSKC	00000020	RG	02
MPSSGL_SCNDMSKT	00000024	RG	02
MPSSGL_SECREQFLG	00000040	RG	02
MPSSGL_STATE	00000014	RG	02
MPSSGL_STOPFLAG	00000034	RG	02
MPSSGL_MPSTRTIM	00000050	RG	02
MPSSK_ERLBUFSIZ	= 00000200		
MPSSK_INITSTATE	= 00000005		
MPSSK_INV_NACK	00000078	RG	02
SCHSGC_NUCLPCB	*****	X	02

+-----+
! Psect synopsis !
+-----+

PSECT name	Allocation	PSECT No.	Attributes													
. ABS .	00000000 (0.)	00 (0.)	NOPIC	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE			
\$ABSS	00000000 (0.)	01 (1.)	NOPIC	USR	CON	ABS	LCL	NOSHR	EXE	RD	WRT	NOVEC	BYTE			
\$\$\$MPDATA	000000E4 (228.)	02 (2.)	NOPIC	USR	CON	REL	LCL	NOSHR	EXE	RD	WRT	NOVEC	LONG			
\$\$\$ERLBUF	00000400 (1024.)	03 (3.)	NOPIC	USR	CON	REL	LCL	NOSHR	EXE	RD	WRT	NOVEC	QUAD			
\$\$\$INTSTK	00000400 (1024.)	04 (4.)	NOPIC	USR	CON	REL	LCL	NOSHR	EXE	RD	WRT	NOVEC	LONG			

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	32	00:00:00.10	00:00:00.56
Command processing	155	00:00:00.95	00:00:06.06
Pass 1	164	00:00:02.68	00:00:09.60
Symbol table sort	0	00:00:00.16	00:00:00.17
Pass 2	52	00:00:00.73	00:00:02.44
Symbol table output	5	00:00:00.03	00:00:00.07
Psect synopsis output	2	00:00:00.03	00:00:00.03

MPDAT
VAX-11 Macro Run Statistics

- MULTI-PROCESSING DATA BASE

N 1

16-SEP-1984 02:00:27 VAX/VMS Macro V04-00
5-SEP-1984 02:06:11 [MP.SRC]MPDAT.MAR;1

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Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	412	00:00:04.68	00:00:18.93

The working set limit was 1050 pages.
10468 bytes (21 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 168 non-local and 0 local symbols.
194 source lines were read in Pass 1, producing 18 object records in Pass 2.
15 pages of virtual memory were used to define 14 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name	Macros defined
-----	-----
\$255\$DUA28:[MP.OBJ]MP.MLB;1	2
\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	6
\$255\$DUA28:[SYSLIB]STARLET.MLB;2	3
TOTALS (all libraries)	11

257 GETS were required to define 11 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LISS:MPDAT/OBJ=OBJ\$:MPDAT MSRC\$:MPPREFIX/UPDATE=(ENH\$:MPPREFIX)+MSRC\$:MPDAT/UPDATE=(ENH\$:MPDAT)+EXECMLS/LIB+LIB\$:MP.MLB/LI

0248 AH-BT13A-SE
VAX/VMS V4.0

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